IN THE CLAIMS:

Replace the indicated claims with:

1. (Amended) A digital multiplication apparatus adopting redundant binary arithmetic for multiplying a number X by an m-bit number Y to produce a product, using a radix-2k number system, the apparatus comprising:

a data converter for data-converting the m-bit number Y into m/k-digit data D ($= D_{m/k-1}D_{m/k-2} \ldots D_i \ldots D_iD_o$);

a partial product calculator for converting each of the digits Di of the m/k-digit data D converted by the data converter into a combination of coefficients of a fundamental multiple, multiplying the combination by the number X, to produce redundant binary partial products;

a redundant binary adder for summing the redundant binary partial products for each of the m/k-digit data D to produce a redundant binary sum; and

a redundant binary (RB)-normal binary (NB) converter for converting the redundant binary sum into a normal binary number and outputting the normal binary sum as the product of the two numbers X and Y.

8. (Amended) A digital multiplication method adopting redundant binary arithmetic for multiplying a number X by an m-bit number Y to produce a product, using a radix-2k number system, the method comprising:

(a) data-converting the m-bit number Y into m/k-digit data D ($= D_{m/k-1}D_{m/k-2} \ldots D_i \ldots D_iD_o$);

(b) converting each of the digits Di of the m/k-digit data D into a combination of coefficients of a fundamental multiple, and multiplying the combination by the number X to obtain redundant binary partial products;

(c) summing the redundant binary partial products for each of the m/k-digit data D to produce a redundant binary sum; and

(d) converting the redundant binary sum into a binary number to obtain the product of the two numbers X and Y.